

WHAT IS CLAIMED IS:

1. A linear guide apparatus comprising:

an axially extending guide rail having a first rolling groove on its outer surface;

5 a slider engaged with the guide rail and having a second rolling groove, rolling element return grooves and curved grooves, the second rolling groove confronting the first rolling groove, the rolling element return grooves being coupled to both end portions of the second rolling groove  
10 through the curved grooves, respectively;

a plurality of rolling elements loaded into the slider to be made circulatable through the second rolling groove, the curved grooves, and the rolling element return grooves; and

a sealing device fixed to the slider in slidable  
15 contact with the guide rail for sealing a clearance existing between the guide rail and the slider, the sealing device comprising:

a lubricant-containing polymer member formed of a synthetic resin containing a lubricant, and having a contact  
20 portion contacting with the guide rail to surround the guide rail, both wing portions, and a connecting portion connecting the wing portions to be C-shaped substantially; and

a first plate member fitted to the lubricant-containing polymer member, wherein the lubricant-containing polymer member  
25 is interposed between the slider and the first plate member.

2. The linear guide apparatus of claim 1, wherein the first plate member comprises a side seal.

3. The linear guide apparatus of claim 1, wherein the sealing device comprises a second plate member interposed  
5 between the slider and the lubricant-containing polymer member.

4. The linear guide apparatus of claim 3, wherein at least one of the first plate member and the second plate member comprises a side seal.

5. The linear guide apparatus of claim 1, wherein the  
10 wing portions and the connecting portion form an opening so that the lubricant-containing polymer member is C-shaped substantially, and the lubricant-containing polymer member is deformable so that the opening shrinks.

6. The linear guide apparatus of claim 1, wherein the  
15 lubricant-containing polymer member is deformable in a direction of moving the wing portions toward each other to press the contact portion against the guide rail.

7. The linear guide apparatus of claim 1, wherein the lubricant-containing polymer member has an inner bottom face  
20 arc-shaped in the connecting portion which elastically protrudes toward the guide rail.

8. The linear guide apparatus of claim 1, wherein the sealing device comprises a pair of first recesses formed in the respective wing portions for fixing the lubricant-containing polymer member to the slider and a pair of first cylindrical members inserted to the respective first recesses.

9. The linear guide apparatus of claim 8, wherein the lubricant-containing polymer member includes a second recess formed in the connecting portion, and the sealing device comprises a second cylindrical member inserted to the second recess, the second cylindrical member having an outer diameter larger than an inner diameter of the second recess.

10. The linear guide apparatus of claim 8, wherein each of the first cylindrical members has a ring shape.

11. The linear guide apparatus of claim 1, wherein the lubricant-containing polymer member has an elastic member to press against the guide rail.

12. The linear guide apparatus of claim 11, wherein the elastic member extends along the contact portion, the elastic member being fitted closed to the contact portion.

13. The linear guide apparatus of claim 1, wherein the sealing device comprises a second plate member interposed between the slider and the lubricant-containing polymer member.

14. The linear guide apparatus of claim 8, wherein  
5 each of the first cylindrical members has an axial length larger than a thickness of the lubricant-containing polymer member.

15. The linear guide apparatus of claim 9, wherein the second cylindrical member has an axial length larger than a  
10 thickness of the lubricant-containing polymer member.

16. The linear guide apparatus of claim 1, wherein the lubricant-containing polymer member is formed of polyolefinic polymer containing the lubricant of 20 to 80 % by weight.

17. The linear guide apparatus of claim 1, wherein the  
15 first plate member is formed of nitrile rubber.

18. The linear guide apparatus of claim 1, wherein the lubricant-containing polymer member comprises a plurality of seal lips formed in the contact portion to contact the guide rail slidably, the seal lips comprising a plurality of cutout  
20 portions arranged in a thickness direction of the sealing device.

19. A linear guide apparatus comprising:

an axially extending guide rail having a first rolling groove on its outer surface;

a slider engaged with the guide rail and having a second rolling groove, rolling element return grooves and curved grooves, the second rolling groove confronting the first rolling groove, the rolling element return grooves being coupled to both end portions of the second rolling groove through the curved grooves, respectively;

a plurality of rolling elements loaded into the slider to be made circulatable through the second rolling groove, the curved grooves, and the rolling element return grooves; and

a sealing device fixed to the slider in slidable contact with the guide rail for sealing a clearance existing between the guide rail and the slider, the sealing device comprising:

a side seal directly or indirectly fixed to the slider and having a seal lip contacting with the guide rail; and

a lubricant-containing polymer member formed of a synthetic resin containing a lubricant and disposed closed to the seal lip.

20. The linear guide apparatus of claim 19, wherein the lubricant-containing polymer member includes a contact portion contacting with the guide rail.

21. The linear guide apparatus of claim 19, wherein the side seal is formed of a material cured with polyurethane rubber containing grease.

22. The linear guide apparatus of claim 19, wherein  
5 the lubricant-containing polymer member is formed of polyolefinic polymer containing the lubricant of 20 to 80 % by weight.